REMARKS

Claims 1-2, 4 through 19, and 27 through 33 stand rejected under 35 USC 102(b) as anticipated (fully met) by Ray US Patent 6,416,649. The Examiner states that Ray discloses the method of providing a metal-ceramic substrate, forming a molten metal oxide compound comprising ferrite and nickel, and coating the substrate. The Examiner states that Ray teaches that the substrate is oxidized to promote adherence of the molten metal oxide.

Applicants have currently amended claim 1, clearly differentiating the instant invention from Ray. Applicants' invention is an anode with a metal substrate having a surface that is coated with a *molten* metal oxide compound comprising ferrite and at least one divalent metal selected from the group consisting of iron, nickel, manganese, magnesium, and cobalt. As taught by Ray in col. 3, line 2 - col. 4, line 64 the inert anode is a "ceramic inert anode" composed of at least 90 weight % ceramic. Ray makes no mention of a metal substrate. Ray's inert anode is comprised substantially (i.e. monolithically) entirely of a ceramic material. In an exemplary embodiment, col. 4 on lines 26-33, Ray's invention is formed for instance in ratios of 45 to 65 mole percent NiO, 20-45 mole % Fe_2O_3, and 0.01 to 22 mole % ZnO. In Ray, there is no mention of a metal (only metal oxides). In the Applicants' invention, as is taught on page 8, lines 11-13 of the specification, the surface of the metal is raised and /or dimpled or knurled. Ray does not teach a method where the ceramic material is coated on the surface of a metal substrate using a molten ceramic material. In virtually

every embodiment Ray's entire anode has a ceramic material composition. Ray teaches that inert anode can be formed by powder sintering, sol-gel process, slip casting and spray forming, but Ray does not teach that the metal oxide ferrite is coated as a **molten** material on the surface a metal substrate as is claimed in claim 1 (currently amended), claim 27 (currently amended), and claim 31 (currently amended). This differentiation between Ray's invention and Applicants' invention is supported by the fact that neither term, "molten" nor "surface" is used in the Ray patent. The rejection applied to claims 1, 27 and 31 is respectfully overcome.

The Examiner has stated that Ray teaches that the substrate is oxidized to promote adhesion, and that the coating of the substrate is by immersion.

Applicants presume that since Ray doesn't actually teach oxidizing the surface, the Examiner is arguing that if the substrate is comprised of a metal oxide, then the surface is oxidized. Claim 2 is currently amended to read on ***only*** the surface of said anode substrate. As Ray's composition employs a metal oxide throughout the anode, it would be oxidized throughout, not only on the surface, and therefore the rejection is overcome. The Examiner is in error as to Ray teaching "immersion". Nowhere in the patent is immersion taught. Ray teaches powder sintering, sol-gel process, slip casting and spray forming. None of these are immersion processes, and none are molten processes. A "slip" process is not a "dip" process. A slip process is essentially a de-watering or settling process. Again, there is no basis for the rejection.

Claims 5, 7 and 15 are cancelled.

Claim 6 is currently amended to read on molten metal oxide compound that is nickel ferrite. Ray does teach the use of molten compounds.

Claims 8-10 reads on a bi-metallic metal substrate. Applicants address the issue that the coating may have a different coefficient of expansion than the metal substrate on page 14, lines 3-7, and compensate for this by the selection of a bi-metallic metal. Ray's anode is composed of one ceramic material, and would not have this difference in thermal expansion. Applicants address the issue through the use of a bi-metallic metal substrate. Ray doesn't teach an inert anode having a metal core. Ray's ceramic anode has a composition as given in Table 1. The composition is substantially homogenous. Furthermore, Ray does not teach a bi-metallic core. Ray teaches anodes substantially uniformly composed of metal oxides.

Claim 11 is currently amended to claim that the ferrite can be formed in situ in the presence of oxygen and iron and another metal. Claim 11 also derives its novelty from parent claim 1, from when it depends.

Claim 12 is currently amended to claim methods of applying molten metal oxide compound comprising ferrite. There is no overlap with Ray who teaches powder sintering, sol-gel process,

slip casting and spray forming, as Ray is not teaching a molten product, but a powder or dispersion that is subsequently heated to **1,000-1,400**°C and very high pressures.

Claims 13-14 have no counterpart in Ray. The Examiner has summarily rejected these claims, and has provided no basis for the rejection. Indeed, Ray's ceramic anode 50 in Fig. 1 has no raised or indented portions, knurls, dimples, or a waffle pattern. Ray teaches away from raised or indented portions, knurls, dimples, or a waffle pattern, as the more convoluted the surface, the harder to disengage the pressurized plates of the mold forming the sintered anode.

Claims 16 - 19, which read on a dopant, derive their novelty from the parent claim, claim 1. In claim 18, Ray provides no counterpart to sulfides or carbonates as doping agents. The only carbonates are polycarbonates, and these are organic binders. Not dopants.

Claims 28 - 30, which read on a dopant, derive their novelty from the parent claim, claim 27. In claim 30, Ray provides no counterpart to sulfides or carbonates as doping agents. The only carbonates are polycarbonates, and these are organic binders. Not dopants.

Claims 32 - 33, which read on a dopant, derive their novelty from the parent claim, claim 27. In claim 31, Ray provides no counterpart to sulfides or carbonates as doping agents. The only carbonates are polycarbonates, and these are organic binders. Not dopants.

Applicant submits that the amendment and arguments overcome the rejections to claims 1, 2 4-19 and 27-33. Clearly, therefore, claims 1-2, 4-19, and 27-33 are not fully met by the cited Ray reference within the meaning of 35 USC 102(b), and it is respectfully requested that this ground of rejection be withdrawn

Claims 3 and 20-26 stand rejected under U.S.C. 103(a) as being unpatentable over Ray.

Applicants' claims 3 and 20-26 partially derive their novelty from the parent claim, claim 1. Examiner admits that Ray lacks mentioning post heat treatment and slow cooling, but states it would be obvious. Ray's anode has a monolithic composition, that does not include a core of a metal substrate, where the metal substrate is a metal, and therefore has different properties, such as thermal coefficient of expansion, than the Applicants' ceramic coating of a molten metal oxide compound, Also Aaplicants are employing higher temperatures than Ray to utilize molten ceramics, there post treatment is less of a consideration for Ray. Ray teaches isostatically pressing spray dried oxide material at 10,000 to 40,000 psi (see col. 5, lines 21 - 23), and then sintering in a low oxygen atmosphere for 1,000 - 1,400°C. In a sintering process, gas is continuously drawn through to prevent melting. Applicants utilize melting, while Ray avoids melting. Applicants invented anode requires no pressure and specialized atmosphere, and no spray dried application. Applicants are applying a molten coating, while Ray is fabricating a sintered part from a powder.

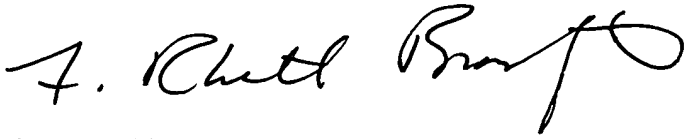
An equal argument could be made that generally thinner coatings require less post treatment than a solid mass. In view of the vastly different processes, the Examiner is leaping to a conclusion that Ray would know to post heat treat the anode to make it stronger. Ray has a thicker piece that is essentially annealed while it is being formed, while Applicants have an anode comprised of two different materials, the metal core and the ceramic coating.

Applicant submits that the amendment and arguments overcome the rejections to claims 3 and 20-26. Applicants state on page 11, lines 8-10 of their Specification: "This post heat treatment is for stress relief, phase composition adjustment, as required, and final microstructure adjustment". Since this is for a completely different reason, it cannot be said that the post coating heat treatment is obvious. Further, since claims 3 and 20-26 are dependent on claim 1, either directly, or through another claim, they should be equally patentable with claim 1. Clearly, Ray fails to render the claims obvious within the meaning of 35 USC 103(a).

Since the amendment to the claims does not add more claims than previously paid for, no additional fee for the claims is required. Fees for the RCE and 2 months extension of time are included.

In view of the foregoing amendment and these remarks, allowance of all claims remaining in the subject application is now believed to be in order, and such favorable action is respectfully requested on behalf of Applicants.

Respectfully submitted,



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